Tivoli. **Netcool/OMNIbus Probe for Nortel CNM**
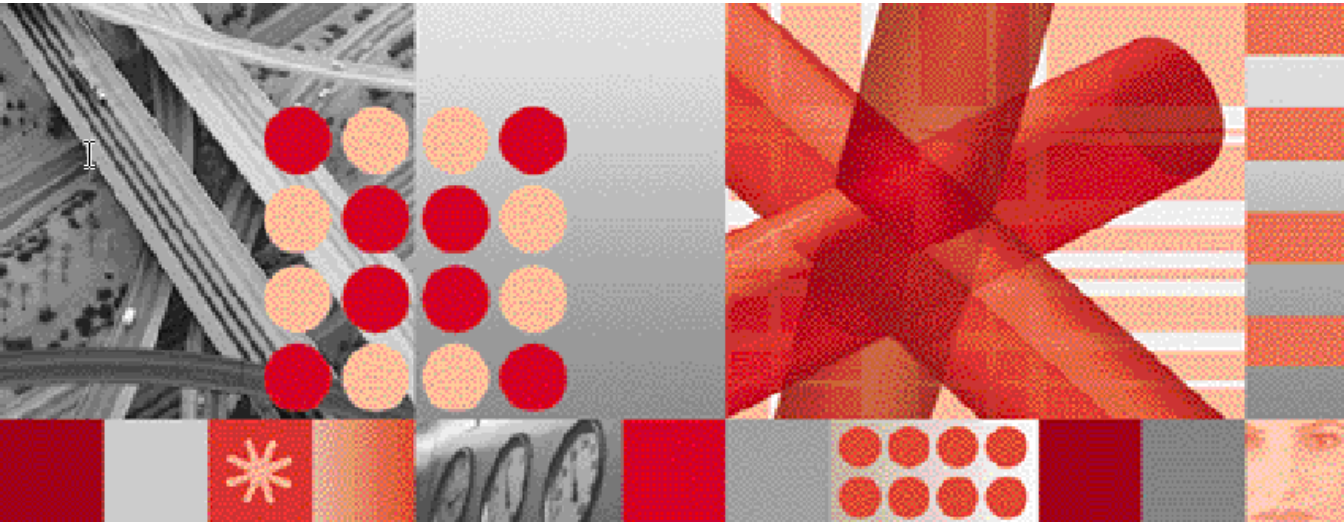
IBM

1.0.3744

Reference Guide

Publication Date: December 22, 2007

Note

Before using this information and the product it supports, read the information in Appendix A. "Notices" on page 25.

This edition applies to 1.0.3744 of Netcool/OMNIbus Probe for Nortel CNM (SC23-6398-02) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC23-6398-01.

Contents

Document control page

The Netcool/OMNIbus Probe for Nortel CNM documentation is provided in softcopy format only. To obtain the most recent version, visit the IBM Tivoli Netcool Information Center:

http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/index.jsp

Table 1. *Document modification history*

Document version	Publication date	Comments
01	June 22, 2007	First IBM publication.
02	December 22, 2007	Summary section updated. Secure FTP connection information added. Connecting to a remote system section added. FtpPassword property removed.

Probe for Nortel CNM

Nortel CNM (CDMA Network manager) is a networking and service management system that provides a real-time view of the service provisioning, order managment, fault and performance management for an enterprise customer's network. This system supports multiple wireless network technologies, and customer management interfaces for the creation, delivery, and playback of multimedia over GSM and CDMA2000 wireless networks.

The Probe for Nortel CNM collects alarms from Nortel CNM system using a 3GPP2 CORBA (Common Object Request Broker Architecture) interface for CDMA2000 networks.

This guide contains the following sections:

- *Summary*
- *Supported platforms*
- *Basic configuration*
- *Data acquisition*
- *Peer-to-Peer failover functionality*
- *Internationalization support*
- *Properties and command line options*
- *Elements*
- *Error messages*
- *ProbeWatch messages*

Summary

Table 2 provides a summary of the Probe for Nortel CNM.

Table 2. *Summary*

Probe target	Nortel CNM version 7
Probe executable name	`nco_p_nortel_cnm`
Patch number	1.0
Probe supported on	HP-UX, Solaris
Properties file	`$OMNIHOME/probes/`*arch*`/nortel_cnm.props`
Rules file	`$OMNIHOME/probes/`*arch*`/nortel_cnm.rules`

Requirements	A currently supported version of Tivoli Netcool/OMNIbus.
	
	 `JDK 1.5`
	
	 `probe-compatibility-3.x` (for Tivoli Netcool/ OMNIbus 3.6)
	
	 `probe-nonnative-base`
	
	 `probe-nonnative-java`
	
	 `nco_p_commandport-0`
	
	 `probe-visibroker-support`
	
	 Note: The Visibroker patch is not available on the support site; to obtain this patch, you must contact IBM Technical Support.

Connection method	CORBA
Remote connectivity	Yes
Licensing	Electronic licensing is no longer implemented in Tivoli Netcool/OMNIbus products. All Tivoli products now use the IBM Tivoli software licensing process.
Internationalization	Available
Peer-to-peer failover functionality	Available
IP environment	IPv4 and IPv6 **Note:** The probe only supports the IPv6 environment on Tivoli Netcool/OMNIbus v7.x running on Solaris.

Supported platforms

For details of the versions of HP-UX and Solaris on which this probe is supported, see the following page on the IBM Tivoli Netcool Information Center:

http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/index.jsp?topic=/com.ibm.netcool_OMNIbus.doc/Supported_Platforms.htm

Basic configuration

This section describes the basic configuration requirements for the Probe for Nortel CNM.

Installation requirements

Before running the probe, you must install the `JDK 1.5` runtime libraries and the following IBM Tivoli Netcool/OMNIbus patches in the following order:

1. `probe-compatibility-3.x`
2. `probe-nonnative-base`
3. `probe-nonnative-java`
4. `nco_p_commandport-0`
5. `probe-visibroker-support`

Note: These patches (except the VisiBroker patch) are available from the IBM Support Site. To obtain the VisiBroker patch, you must contact IBM Support.

Updating the rules file

The Probe for Nortel CNM is supplied with a lookup table (`Corba_3gpp2_R6C1.lookup`). This file is installed in the following location:

```
$OMNIHOME/probes/includes/
```

This file is referenced in the rules file by the following command:

```
include "/opt/netcool/probes/includes/Corba_3gpp2_R6C1.lookup"
```

If the Tivoli Netcool/OMNIbus installation directory is different from `/opt/netcool/`, you must update the rules file `include` statement accordingly.

Note: `$OMNIHOME` cannot be used in the paths to the lookup files; you must enter the full path to the Tivoli Netcool/OMNIbus installation directory.

Data acquisition

The Probe for Nortel CNM gathers events from the Nortel CNM 3GPP servers using a Common Object Request Broker Architecture (CORBA) interface. CORBA is an Object Management Group specification that provides a standard interface definition between objects in a distributed environment; that is, it allows applications to communicate with one another regardless of where they are located or who has designed them.

Connecting to the CORBA interface

The Probe for Nortel CNM acts as an Integration Reference Point (IRP) Manager. The AlarmIRPOperation and NotificationIRPOperation points form a part of the IRP agent to which the probe connects through a CORBA interface.

The probe uses the Using Interoperable Object Reference (IOR) files for this connection:

Using IOR files

To connect to the CORBA interface, the probe uses the `SecurityIRPAgent` Interoperable Object Reference (IOR) file. If the IOR file is on a remote machine, specify the FTP command that the probe must use to access it using the `SecurityIrpFtpCommand` property. If the IOR file is on a local machine, specify its location using the `NortelSecurityIrpFile` property.

Connecting to a remote system

The probe uses secure mode to connect to the remote machine where the IOR file is available.

To access the IOR file on the remote machine, perform the following steps:

1. Set up the required OpenSSL environment in both the probe server and target system.
2. Create your own PKI key. Remember the password that you specify while creating the PKI key.
3. Change the access permissions of the PKI key for the SSH to access.
4. Edit the `download_ior.sh` script so that the `IOR_FILE_NAME` script variable points to the same value as the `NortelSecurityIrpFile` property.
5. Replace the `<remote machine name>:<remote path to nortel ior file>` text in the `download_ior.sh` script with the location and name of the remote machine.
6. Replace the `<password>` text in the `add-passwd` script with the password you specified while creating the PKI key.
7. Run the probe.

The FTP command is run in the user's home directory. For FTP users other than root, you must change the default path specified by the `NortelSecurityIrpFile` property to enable the probe to locate the security IRP file; for example, if the FTP user is `norteluser`, the home directory for this user will be /home/norteluser. In this case, you must change the default path specified by the `NortelSecurityIrpFile` property to:

```
../../opt/nortel/config/3GPP/NortelSecurityIrpAgent.ior
```

Status checking

The probe checks the status of the IRP agent every 60 seconds. You can change this frequency if required using the `Agentheartbeat` property.

Retrieving objects

If the `Resynch` property is set to `true`, the probe initially receives a list of all active alarms from the AlarmIRP server. The probe then connects to the NotificationIRP server and uses the CORBA notification push model to receive new alarms from the server as they are generated. If the `Resynch` property is set to `false`, the probe only receives new alarms.

The probe initially receives a list of all active alarms from the AlarmIRP server. The probe then connects to the NotificationIRP server and uses the CORBA notification push model to receive new alarms from the server as they are generated.

Running multiple probes

You can run multiple instances of the Probe for Nortel CNM. For each instance running, you must specify a different port to which the server listens using the `ORBLocalport` property.

Shutting down the probe

To stop an instance of the probe, you must issue a stop signal to the process associated with that probe instance.

Timeout

The Probe for Nortel CNM has a timeout facility that allows it to disconnect from the system if there is no activity for a predefined amount of time. You can specify how long the probe waits before disconnecting using the `Timeout` property.

Filtering notifications and alarms

The `NotificationFilter` and `AlarmFilter` properties allow you to specify what notifications and alarms the probe expects from the device. When you use these properties, you must use the actual token names. For example, the token h represents the element `NV_PERCEIVED_SEVERITY`; so, to specify that the probe is only sent notifications with a perceived severity of 3, you must set the `NotificationFilter` property to `$h == 3`.

You can specify more complex filters using `and` and `or` statements; for example, to specify that the probe is sent notifications with a perceived severity of 3 or 4, you must set the `NotificationFilter` property to `$h == 3 or $h == 4`.

Note: The filtering of elements sent from the device can only be configured at the Nortel CNM 3GPP2 (CORBA). For details of the syntax required for filtering the object classes refer to your CORBA documentation, or contact your system administrator.

Table 3 displays the token mappings for use with the `AlarmFilter` and `NotificationFilter` properties.

Table 3. *Token mappings (1 of 2)*

Element	Token
NV_NOTIFICATION_ID	a
NV_EVENT_TIME	b
NV_SYSTEM_DN	c
NV_MANAGED_OBJECT_CLASS	d
NV_MANAGED_OBJECT_INSTANCE	e
NV_ALARM_ID	f
NV_PROBABLE_CAUSE	g
NV_PERCEIVED_SEVERITY	h
NV_SPECIFIC_PROBLEM	i
NV_ADDITIONAL_TEXT	j
NV_ACK_TIME	k
NV_ACK_USER_ID	l
NV_ACK_SYSTEM_ID	m
NV_ACK_STATE	n
NV_COMMENTS	o
NV_BACKED_UP_STATUS	p
NV_BACK_UP_OBJECT	q
NV_THRESHOLD_INFO	r
NV_TREND_INDICATION	s

Table 3. *Token mappings (2 of 2)*

Element	Token
NV_STATE_CHANGE_DEFINITION	t
NV_MONITORED_ATTRIBUTES	u
NV_PROPOSED_REPAIR_ACTIONS	v
NV_CORRELATED_NOTIFICATIONS	w
NV_REASON	x
CLEAR_USER_ID	y
CLEAR_SYSTEM_ID	z
NV_ALARM_LIST_ALIGNMENT_ REQUIREMENT	ff
NV_SERVICE_USER	gg
NV_SERVICE_PROVIDER	hh
NV_SECURITY_ALARM_DETECTOR	ii
NV_VENDOR_SPECIFIC_ALARM_TYPE	jj
NV_ALARM_RAISED_TIME	kk
NV_ALARM_CLEARED_TIME	ll

Command line interface

The Probe for Nortel CNM is supplied with a command line interface (CLI). This interface allows you to perform commands using the probe (for example, to acknowledge alarms or to request a full resynchronization of the CORBA interface).

To use the CLI, you must use the CommandPort property in the properties file to specify a port through which commands will be sent. When you want to perform commands, telnet to this port. Table 4 describes the commands that you can use with the command line interface.

Table 4. *CLI commands (1 of 2)*

Command	Description
acknowledge_alarm	Allows you to acknowledge an alarm in the 3GPP2 interface. **Note:** This command takes as a parameter the NV_ALARM_ID of the alarm being acknowledged. Only one alarm can be acknowledged at a time.
help	Displays online help about the CLI.
resynch_all	Allows you to perform a full resynchonization with the 3GPP2 interface.

Table 4. *CLI commands (2 of 2)*

Command	Description
resynch_filter	Allows you to a perform partial resynchronization with the 3GPP2 interface.
	Note: This command takes as a parameter a filter in the same format as the AlarmFilter property. For details, see "Filtering notifications and alarms" on page 6.
unacknowledge_alarm	Allows you to unacknowledge an alarm in the 3GPP2 interface.
userid_clear_alarms	Allows you to clear an alarm in the 3GPP2 interface by specifying the USER_ID. This parameter is specified by the ClearSystemId property.
user_clear_alarms	Allows you to clear the identity of the user who who invokes the clearAlarms operation.
userid_acknowledge_alarm	Allows you to acknowledge an alarm in the 3GPP2 interface by specifying the NV_ALARM_ID and the NV_ACK_USER_ID. These parameters are specified by the AckSystemId and AckUserId properties, respectively.
userid_unacknowledge_alarm	Allows you to unacknowledge an alarm in the 3GPP2 interface by specifying the NV_ALARM_ID and the NV_ACK_USER_ID.
version	Displays the version of the probe.

Note: Since the CLI is based upon telnet connections, you can connect to the probe from anywhere. This means that simple scripts can be set up to allow users to acknowledge selected events from the Tivoli Netcool/OMNIbus event list by creating desktop tools to telnet to the probe, send a command, and then close the connection.

Peer-to-Peer failover functionality

The Probe for Nortel CNM supports failover configurations where two probes run simultaneously. One probe acts as the master probe, sending events to the ObjectServer; the other acts as the slave probe on standby. In the event of the master probe failing, the slave probe activates.

While the slave probe receives heartbeats from the master probe, it will not forward events to the ObjectServer. If the master shuts down, the slave probe will stop receiving heartbeats from the master and any events it receives thereafter will be forwarded to the ObjectServer on behalf of the master probe. When the master is running again, the slave will continue to receive events from the trap forwarder, but will no longer send them to the ObjectServer.

Example property file settings for peer-to-peer failover

The following configuration shows the peer-to-peer settings from the properties file of an example master probe:

```
Server      :"NCOMS"
RulesFile   :"master_rules_file"
MessageLog  :"master_log_file"
PeerHost    :"slave_hostname"
PeerPort    : 5555 # [communication port between master and slave probes]
Mode        :"master"
```

The following configuration shows the peer-to-peer settings from the properties file of the corresponding slave probe:

```
Server      :"NCOMS"
RulesFile   :"slave_rules_file"
MessageLog  :"slave_log_file"
PeerHost    :"master_hostname"
PeerPort    : 5555 # [communication port between master and slave probes]
Mode        :"slave"
```

Internationalization support

The Probe for Nortel CNM supports multi-byte character sets. To view the character sets correctly, you must configure the locale settings on the host machine correctly. Each multi-byte character set is configured slightly differently on each platform. The following section describes example locale configurations on a UNIX platform; other character sets on other platforms will be configured in a similar way.

Example multi-byte character set configuration on Solaris

The following steps describe how to configure Solaris to use the Japanese character set:

1. Install the necessary components for Japanese on to the host machine using the Solaris CD.

2. Set the `LANG` and `LC_ALL` environment variables to `ja_JP PCK`. This uses SJIS encoding.

   Note: You may have to set `LANG` in the host machine's default settings file and reboot to make the changes take effect.

3. Make sure that the following entry is present in the `$OMNIHOME/platform/arch/locales/locales.dat` file:

   ```
   locale = ja_JP PCK, japanese, sjis
   ```

   where `ja_JP PCK` is the vendor locale, `japanese` is the Sybase language, and `sjis` is the Sybase character set.

Properties and command line options

Table 5 describes the properties and command line options specific to this probe. For information about generic probe properties and command line options, see the *IBM Tivoli Netcool/OMNIbus Probe and Gateway Guide*, (SC23-6387).

Table 5. *Properties and command line options (1 of 4)*

Property name	Command line option	Description
AckSystemId *string*	-acksystemid *string*	Processing system on which the IRP Manager runs. This is used by the acknowledge_alarm CLI function. The default is "".
AckUserId *string*	-ackuserid *string*	Name of the user acknowledging the alarm. This is used by the acknowledge_alarm CLI function. The default is "".
Agentheartbeat *integer*	-agentheartbeat *integer*	Frequency (in seconds) with which the probe checks the status of the IRP agent. The default is 60.
AlarmFilter *string*	-alarmfilter *string*	Filter the alarm IRP uses to limit the alarms sent to the probe. The default is "".
AlarmIrpName *string*	-alarmirpname *string*	Name of the Alarm IRP Agent. The default is 32.111-3 V6.5.
ClearSystemId *string*	-clearsystemid *string*	Name of the IRP Manager that supports the user who clears the alarms using the CLI. It can be used to identify the system, such as system 6, or it can contain no information such as "". The default is "". For more information on CLI, see "Command line interface" on page 7.
ClearUserId *string*	-clearuserid *string*	Name of the user clearing the alarms used by the CLI function of the probe. The identity can be a human operator such as "John Smith", or a group such as "Team Six", or it can contain no information such as "". The default is "". For more information on CLI, see "Command line interface" on page 7.

Table 5. *Properties and command line options (2 of 4)*

Property name	Command line option	Description
CommandPort `integer`	-commandport `integer`	Specifies the port to which users can telnet to communicate with the 3GPP2 interface using the Command Line Interface (CLI) supplied with the probe. For more information on CLI, see "Command line interface" on page 7. The default is 6970.
CommandPortLimit `integer`	-commandportlimit `integer`	Maximum number of telnet connections that can be made to the probe. The default is 10.
EntryPointIrpName `string`	-entrypointirpname `string`	Name used to resolve the EntryPoint IRP. The default is 32.363 V6.4.
NortelSecurityIrp File `string`	-nortelsecurityirp file `string`	File that provides an object reference to the Nortel security object. The default is opt/nortel/config/3gpp/ NortelSecurityIrpAgent.ior.
Notification Categories `string`	-notification categories `string`	Specifies the categories of notifications to which the probe subscribes. A semi-colon (;) separates each category: category1;category2;category3… The default is "" (subscribes to all notification categories).
Notification Filter `string`	-notification filter `string`	Filter the notification IRP uses when subscribing to online notifications. The default is "".
NotificationIrp Name `string`	-notificationirp name `string`	Name of the Notification IRP IOR file. The default is 32.303 V6.6.
ORBLocalPort `integer`	-orblocalport `integer`	Local port to which the Object Request Broker (ORB) listens. The default is 0 (ORB selects an available port at random).

Table 5. *Properties and command line options (3 of 4)*

Property name	Command line option	Description
Password *string*	-password *string*	Password required with the `Username` property to log in to the system. The default is `""`. **Note:** Specify the password encrypted using the `nco_g_crypt` utility. For details about this utility, see *IBM Tivoli Netcool/OMNIbus Administration Guide, SC23-6371.*
Resynch *string*	-resynch *string*	Specifies whether the probe should resynchronize the events in the Nortel CNM system: `true` - probe resynchronizes events in the system `false` - probe does not resynchronize events in the system he default is `false`.
Retry *string*	-retry *string*	Specifies whether the probe attempts to reconnect to the system following a timeout: `false` - probe does not attempt to reconnect to the system `true` - probe attempts to reconnect to the system The default is `false`.
SecurityIrpFtp Command *string*	-securityirp ftpcommand *string*	FTP command to retrieve the Nortel Security IRP IOR file. The default is `""` (the probe retrieves IOR file from the default local location).
Timeout *integer*	-timeout *integer*	Time (in seconds) that the probe allows the port to be silent before disconnecting. The default is `0` (probe never disconnects).

Table 5. *Properties and command line options (4 of 4)*

Property name	Command line option	Description
TimeTick *integer*	-timetick *integer*	Time (in minutes) that the Notificiation IRP session remains open to connections. This is used by the 3GPP server. The default is 15. **Note:** A value of -1 keeps the session forever open.
Username *string*	-username *string*	Username required by the Nortel Security Building Block to provide the object reference to the EntryPoint IRP. The default is "".

Elements

Table 6 describes the elements generated by the Probe for Nortel CNM.

Table 6. *Elements (1 of 2)*

Element name	Element description
AttributeValue(*element_name*)	Contains the value of an element being monitored. This element is generated dynamically and its content is dependent on the IRP agent. **Note:** The *element_name* part of this element and the next element can be the name of any of the other elements in this table.
AttributeValueChange(*element_ name*)	Indicates how the value of the element being monitored has changed.
CLEAR_USER_ID	Identity of the user who clears the alarms.
CLEAR_SYSTEM_ID	Identity of the the IRPManager where the alarms are cleared.
DOMAIN_NAME	Domain name from which the notification originated.
EVENT_NAME	Extended event type for this IRP.
EVENT_TYPE	Event type of the notification.
NV_ACK_STATE	Acknowledgement state of the alarm.
NV_ACK_SYSTEM_ID	System ID of the IRP Manager processing the notification.
NV_ACK_TIME	Time at which the user acknowledged the alarm.
NV_ACK_USER_ID	Identifies the last user who has changed the acknowledgement state.
NV_ADDITIONAL_TEXT	Information about the network element from which the alarm originated.
NV_ALARM_TIME	Date when the alarm is cleared. Date is in the mm/dd/yy format.
NV_ALARM_ID	Identification information of the alarm as it appears in the alarm list.
NV_ALARM_LIST_ALIGNMENT_ REQUIREMENT	Indicates whether the alarm list requires alignment.
NV_ALARM_ALARM_RAISED_TIME	Date when the the alarm is raised. Date is in the mm/dd/yy format.
NV_BACK_UP_OBJECT	Distinguished Name (DN) of the backup object.
NV_COMMENTS	Comments about the alarms.
NV_BACKED_UP_STATUS	Identifies whether the object has been backed up.

Table 6. *Elements (2 of 2)*

Element name	Element description
NV_CORRELATED_NOTIFICATIONS_ *notif_ID_Set*	Set of notifications to which this notification is considered to be correlated. This element is generated dynamically and its content is dependent on the IRP agent.
NV_CORRELATED_NOTIFICATIONS_ SOURCE	Source of the notification set.
NV_EVENT_TIME	Time at which the event occurred.
NV_MANAGED_OBJECT_CLASS	Managed object class of the network resource.
NV_MANAGED_OBJECT_INSTANCE	Managed object instance of the network resource.
NV_MONITORED_ATTRIBUTE	Managed object attribute of the network resource.
NV_NOTIFICATION_ID	Identification information of the notification.
NV_PERCEIVED_SEVERITY	Relative level of urgency for operator attention.
NV_PROBABLE_CAUSE	Provides further information about the probable cause of the alarm.
NV_PROPOSED_REPAIR_ACTIONS	Proposed repair actions associated with the notification.
NV_REASON	Reason that triggered the proposed repair action.
NV_SERVICE_USER	Name of the user who uses the service.
NV_SERVICE_PROVIDER	Name of the service provider.
NV_SECURITY_ALARM_DETECTOR	Security alarm detector for the device.
NV_SPECIFIC_PROBLEM	Further information about the problem to which the notification relates.
NV_STATE_CHANGE_DEFINITION	Information about the status change of the alarm.
NV_SYSTEM_DN	Distinguished name (DN) used to identify the system.
NV_THRESHOLD_INFO	Provides information about a threshold that has been crossed.
NV_TREND_INDICATION	Indicates how an observed condition has changed.
NV_VENDOR_SPECIFIC_ALARM_TYPE	Alarm type specific to the vendor.

Error messages

Table 7 describes the error messages specific to this probe. For information about generic error messages, see the *IBM Tivoli Netcool/OMNIbus Probe and Gateway Guide*, (SC23-6387).

Table 7. Error messages (1 of 4)

Error	Description	Action
`Cannot initialize the Orb:`	The probe could not initialize the ORB.	Ensure your CLASSPATH contains the path to the Visibroker jar files.

Command_Port `Error occurred`
 	
Command_Port `Failed to get`
 	
`CommandPortLimit property - using 10`
 	
Command_Port `Failed to get property` *CommandPort*
 	
Command_Port `Failed to open listening socket, shutting down Thread!`
 	
`Command_Port Failed to send probewatch message!`
 	
Command_Port host `Failed to close command socket`
 	
Command_Port host `Failed to get socket IO`
 	
`Command_Port` *host* `Failed to read command`
 	
Command_Port `Thread shutting down due to error!`
 	
`NetcoolIRPManager: Failed to acknowledge_alarms()`
 	
`NetcoolIRPManager: Failed to Unacknowledge_ alarms()`
	There was a problem with command port functionality.	Check that you have specified the command port correctly. Check the connection between the probe and the command port.

Table 7. *Error messages (2 of 4)*

Error	Description	Action

`BAD_PARAM Exception i.e one or more of the in/out parameter is null`
 	
`InvalidParameter Exception`
 	
`NetcoolIRPManager: Exception occurred. Stack trace to stderr`
 	
`OperationNotSupported Exception`
 	
`Unexpected CORBA Exception`
	There is a problem with the CORBA interface.	Refer to your CORBA documentation.

`COMMUNICATION FAILURE Exception i.e Server is dead`
 	
`GetSubscriptionStatus Exception`
 	
`NetcoolIRPManager:Bot h NameServiceHost and NSPort property needs to be set`
 	
`NetcoolIRPManager: 'Alarmirp' property needs to be set`
 	
`NetcoolIRPManager: 'Notificationirp' property needs to be set`
 	
`NetcoolIRPManager: Failed to perform resynch`
	The probe cannot connect to the server.	Check that the Nortel CNM server is running correctly. Check that you have specified the parameters correctly in the properties file.

Table 7. *Error messages (3 of 4)*

Error	Description	Action

`Error to parse event completely`
 	
`Failed to parse event completely`
 	
`Name is null, cannot create Element`
 	
`NetcoolIRPManager: Category Value NOT supported: Discarding Alarm`
 	
`NetcoolIRPManager: Error when parsing event`
 	
`NetcoolIRPManager: Failed to send event`
	The probe cannot parse the alarm; this is probably because the alarm is not in a format that the probe can understand.	Check that the Nortel CNM server is running correctly.

`Failed to get timeout property value, defaulting to 0`	The `Timeout` property has not been set.	Check the value for the `Timeout` property; change this value if necessary.
`Failed to find the AlarmIRP object`	The probe could not get the `AlarmIRP` object using the EntryPoint IRP.	Check the value for the `AlarmIrpName` property; change this value if necessary.
`Failed to find the NotificationIRP object`	The probe could not get the `NotificationIRP` object using the EntryPoint IRP.	Check the value for the `NotificationIrpName` property; change this value if necessary.
`Failed to perform resynch`	The probe could not resynchronize the alarms with device.	Check the value for the `Resynch` property; change this value if necessary.

`Failed to narrow Security IRP interface`
 	
`SECURITY: Failed to get IRP object :`
 	
`SECURITY: Unknown exception occured`
	The probe has failed to get the `EntryPointIRP` object.	Check the value for the `SecurityIrpFtpCommand` property; change this value if necessary.

`NetcoolIRPManager: Stack Trace to stder:`	This message is generated by the Netcool IRP Manager.	This message is intended for use when debugging.
`NetcoolIRPManager: Failed to retrieve EntryPointIRP object from security interface:`	The probe has failed to get the `EntryPointIRP` object.	Check the value for the `SecurityIrpFtpCommand` property; change this value if necessary.

Table 7. *Error messages (4 of 4)*

Error	Description	Action
`NetcoolIRPManager: Failed to retrieve EntryPointIRP object from security interface:`	The probe has failed to take the Corba Object of the Security IRP and narrow it to its specific type.	Check the value for the `SecurityIrpFtpCommand` property; change this value if necessary.
`Problem while trying to connect to the IRP points`	The probe found a problem while connecting to the `AlarmIRP` or `NotificationIRP` points.	Check the values set for the `AlarmIrpName`, and `NotificationIrpName` property; change the values if necessary.
`Failed to ping notification service`	The probe found a problem while connecting to the `NotificationIRP` point.	Check the values set for the `NotificationIrpName` property; change the values if necessary.
`OperationNotSupported Exception`	The Nortel system doesn't support the `Notification IrpSystem.idl`.	Contact the IBM support.
`Communication failure - lost connection to NoticiationIRP:` `CORBA.TRANSIENT exception raised. NotificationIRP is down!` `CORBA.OBJECT_NOT_ EXIST exception raised. NotificationIRP is down!` `Failed to Connect` `Either, the server is not running, the IOR is out of date, or probe cannot reach remote Server` `Cannot proceed. Shutting down!`	The `NotificationIRP` point from the Nortel System is not responding.	Check that the Nortel CNM system is still running.
`Failed to iterate through resynch alarms`	There was a problem with the resynchronization process.	Check that the Nortel CNM system is running correctly. Check that you have specified the `Resynch` property correctly.

ProbeWatch messages

Table 8 describes the raw ProbeWatch error messages that the probe generates. For information about generic ProbeWatch messages, see the *IBM Tivoli Netcool/OMNIbus Probe and Gateway Guide*, (SC23-6387).

Table 8. *ProbeWatch messages (1 of 3)*

ProbeWatch message	Description	Triggers/causes
Communication failure - lost connection to NoticiationIRP Failed to get subscripton status CORBA TIMEOUT Exception while trying to get subscription status from NotificationIRP CORBA.OBJECT_NOT_ EXIST Exception: Lost connection to NotificationIRP CORBA.TRANSIENT Exception: Lost connection to NotificationIRP	The probe has failed to get the subscription status from the NotificationIRP point.	The Notification service is not available.
Connection to NotificationIRP server has been established	The probe has successfully established a connection to the NotificationIRP point.	The probe has successfully subscribed to the Notification service.
Detaching subscription	The probe is disconnecting from the NotificationIRP point.	Either the probe has not received any events for the specified timeout period, the probe is shutting down, or the probe has received a stop signal.
END SYNCHRONIZATION	The probe is closing the synchronization process.	The probe has finished receiving alarms from the alarm list.
Failed to find IOR file *ior_file_name*	The probe could not find the specified file.	The IRP Manager has not been set up correctly using the properties file.

Table 8. *ProbeWatch messages (2 of 3)*

ProbeWatch message	Description	Triggers/causes

`Failed to log in to the Nortel Security IRP - incorrect username/password`
 	
`Failed to log in to interface`
 	
`PermissionDenied`
 	
`Failed to get IRP Outline`
	The probe could not login to the `SecurityIRP` file.	Incorrect username and password given in the properties file.

`Failed to find IOR file ior_file_name`	The probe could not find the specified file.	The IRP Manager has not been set up correctly using the properties file.
`Failed to listen for commands on port number listening_port`	The probe could not open the socket specified by the port to listen for commands.	The specified port is in use for another process.
`Failed to connect to NotificationIRP: ae.reason. Shutting down`	The probe could not connect to the `NotificationIRP` point.	The specified reason has failed the connection to the `NotificationIRP` point.
`Going Down`	The probe is shutting down.	The probe has started shutting down the connection.

`Invalid IRPVersion`
 	
`Failed to get IRP reference`
	The probe could not retrieve the `NotificationIRP` point.	Incorrect `NotificationIRP` name specified in the properties file.

`Inactivity: No events received for timeout seconds`	The probe has exceeded the time out period already set.	The probe did not receive events for the specified period.
`NetcoolIRPManager: Failed to find IOR file alarmirp_ior _file`	The probe has failed to get the IOR file specified.	The AlarmirpFile property in the properties file is incorrectly set.
`NetcoolIRPManager: Failed to find IOR file notificationirp_ ior_file`	The probe has failed to get the IOR file.	The `NotificationirpFile` property in the properties file is incorrectly set.
`Running`	The probe is successfully running.	The probe has started functioning.
`START SYNCHRONIZATION`	The probe is synchronizing the events.	The probe has started receiving alarms from the alarm list.

Table 8. *ProbeWatch messages (3 of 3)*

ProbeWatch message	Description	Triggers/causes
SYNCHRONIZATION FAILED	The probe could not get new alarms.	The probe failed to get the alarm list, or failed to perform resynchronization of alarms.
Unable to get events	The probe could not get events from Nortel CNM 3GPP2.	The probe has failed to get events.
Unexpected fatal error, failed to connect Unexpected fatal error when connecting to interface Unexpected fatal error while getting IRP Outline Unexpected fatal error when getting IRP reference from Entry Point IRP	The probe encountered an unexpected fatal error.	Contact the IBM support.
Will listen for commands on port number *listening_port*	The probe is listening for commands on the specified port.	The specified port is ready to receive commands.

Appendix A. Notices

This appendix contains the following:

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation
Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106-0032, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

AIX

AIX 5L

Netcool

Intel, Intel Inside (logos), MMX, and Pentium are trademarks of Intel Corporation in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, or service names may be trademarks or service marks of others.